Amendments to the Claims

Claims 10, 11, 13, 14, 22-27, and 30 remain in the application. Claims 10, 11, 13, 14, 25, and 30 have been amended. Claims 1-9, 12, 15-21, and 28-29 have been canceled. No claims have been canceled. A listing of claims follows and will replace all prior versions, and listings, in the application.

Listing of Claims:

1-9. (Canceled)

10. (Currently Amended) ~~The~~ A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations ~~of claim 8 further~~ comprising:

establishing a communications session between a host and a remote access concentrator through a customer premise equipment under a first of a plurality of accounts, where the customer premise equipment is separate from the host;

establishing a second communications session between the host and the remote access concentrator through the customer premise equipment under a second of the plurality of accounts without terminating the first communication session;

retrieving a set of network layer information corresponding to the first account;

retrieving a second set of network layer information, the second set of network information corresponding to the second account;

creating a message having the set of network layer information within a data link layer of the message;

creating a second message having the second set of network layer information within a data link layer of the message;

transmitting the message from the remote access concentrator to the host;

transmitting the second message from the remote access concentrator to the host;

extracting the set of network layer information from the message at the data link

layer;

        extracting the second set of network layer information from the second message;

        applying the set of network layer information to the host to add, into the host, a

            route; and

        applying the second set of network layer information to the host.

11.   (Currently Amended) The machine-readable medium of claim 8-10 further

comprising:

        establishing a second communications session between the host and a second

            remote access concentrator through a customer premise equipment under a

            second of the plurality of accounts without terminating the first

            communication session;

        retrieving a second set of network layer information, the second set of network

            information corresponding to the second account;

            creating a second message having the second set of network layer

                information within a data link layer of the message;

        transmitting the second message from the second remote access concentrator to

            the host;

        extracting the second set of network layer information from the second message;

            and

        applying the second set of network layer information to the host.

12.   (Canceled)

13.   (Currently Amended) The A machine-readable medium that provides instructions,

which when executed by a set of processors, cause said set of processors to perform

operations comprising:of claim 12 further comprising:

        establishing a Point to Point Protocol over Ethernet (PPPoE) session between a

            host to a remote access concentrator through a customer premise

equipment, the PPPoE session being associated to an account, where the

customer premise equipment is separate from the host;

establishing a second PPPoE session between the host and the remote access

concentrator, the second PPPoE session being associated to a second

account;

determining a set of network layer information corresponding to the account in the

PPPoE session;

determining a second set of network layer information corresponding to the

second account;

applying the set of network layer information to the host to add, into the host, a

route; and

applying the second set of network layer information to the host in the PPPoE

session.

14.   (Currently Amended) The machine-readable medium of claim ~~12~~ 13 further
comprising:

establishing a second PPPoE session between the host and a second remote access

concentrator, the second PPPoE session being associated to a second

account;

determining a second set of network layer information corresponding to the

second

account; and

applying the second set of network layer information to the host in the PPPoE

session.

15-21. (Canceled)

22. (Previously Presented)   A method comprising:

establishing multiple simultaneous PPPoE sessions for a single host to access a

plurality of content servers through a set of one or more network elements, wherein one

of the network elements in the set of network elements performs the following during the

establishment of each of the PPPoE sessions,

accessing network layer information previously entered for an account associated to the PPPoE session, wherein different accounts for different ones of the plurality of content servers include distinguishing network layer information, wherein each of the PPPoE sessions is associated to a different one of the accounts,

creating a control protocol message with the accessed network layer information embedded, and

transmitting the control protocol message to the host.

23. (Previously Presented)   The method of claim 22, wherein the accessed network layer information is embedded in a data link layer of the control protocol message.

24. (Previously Presented)   The method of claim 22, further comprising:
    storing the previously entered network layer information in a database.

25. (Currently Amended)   A method comprising:
    a single host establishing multiple simultaneous PPPoE sessions for access to different ones of a plurality of content servers through a set of one or more remote access concentrators, wherein different accounts for different ones of the plurality of content servers include distinguishing network layer information, wherein each of the PPPoE sessions is associated to a different one of the accounts, wherein the single host performs the following during establishment of each of the PPPoE sessions,

receiving from one of the set of remote access concentrators a control protocol message in which is embedded at least some of the distinguishing network layer information for the account accessed for the PPPoE session by the remote access concentrator, and

~~inserting~~ adding a route to the one of the plurality of content servers identified by that network layer information.

26. (Previously Presented)   The method of claim 25, wherein the network layer information is embedded in a data link layer of the control protocol message.

27. (Previously Presented)   The method of claim 25, wherein the distinguishing network layer information is stored in a database that is external to the set of one or more remote access concentrators.

28-29. (Canceled)

30. (Currently Amended)   ~~The~~ A network environment ~~of claim 28~~comprising:

a host device to distinguish simultaneous PPP sessions based on messages having network data embedded within a data link layer of the messages, wherein the network data is accessed based on account information provided by the host device;

   a database to associate different network data to different ones of a plurality of content servers; and

   a network element to communicatively couple the host device through a network to different ones of the plurality of content servers to access the database to create and transmit the messages to the host.